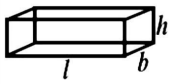
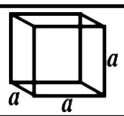
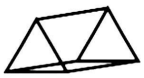
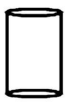
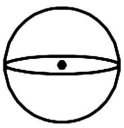
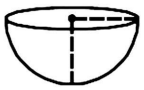
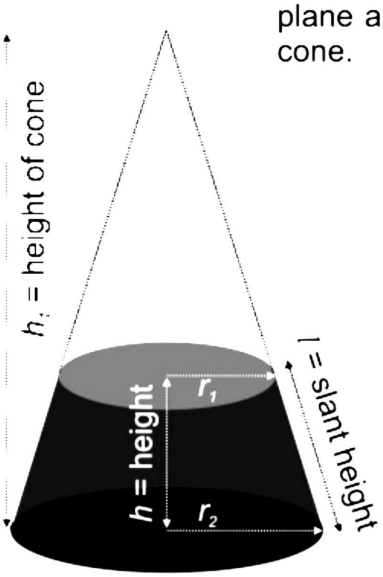
CLASS X : CHAPTER - 13
SURFACE AREAS AND VOLUMES

NCERT NICHOOD

S. No.	Name of the solid	Figure	Lateral / Curved surface area	Total surface area	Volume	Nomen-clature
1.	Cuboid		$2h(l+b)$	$2(lb+bh+hl)$	lbh	l:length b:breadth h:height
2.	Cube		$4a^2$	$6a^2$	a^3	a:side of the cube
3.	Right prism		Perimeter of base × height	Lateral surface area+2(area of the end surface)	area of base ×height	-
4.	Regular circular Cylinder		$2\pi rh$	$2\pi r(r+h)$	πr^2h	r:radius of the base h:height
5.	Right pyramid		$\frac{1}{2}$ (perimeter of base)× slant height	Lateral surfaces area+area of the base	$\frac{1}{3}$ area of the base ×height	-
6.	Right circular cone		πrl	$\pi r(l+r)$	$\frac{1}{3}\pi r^2h$	r:radius of the base h:height l:slant height
7.	Sphere		$4\pi r^2$	$4\pi r^2$	$\frac{4}{3}\pi r^3$	r:radius
8.	Hemisphere		$2\pi r^2$	$3\pi r^2$	$\frac{2}{3}\pi r^3$	r:radius

Frustum of a Cone - If a right circular cone is cut off by a plane parallel to its base, then the portion of the cone between the cutting plane and the base of the cone is called a frustum of a cone.



Slant Height of Frustum (l)	$\sqrt{h^2 + (r_1 - r_2)^2}$
Lateral Surface Area	$\pi(r_1+r_2)l$
Total Surface Area	$\pi\{(r_1+r_2)l + r_1^2 + r_2^2\}$
Volume	$\frac{\pi}{3}(r_1^2 + r_1r_2 + r_2^2)h$
Height of cone of which the frustum is part of (h_1)	$\frac{hr_1}{(r_1 - r_2)}$